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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,088	03/23/2004	Geoffrey Burke Bauer	10543-069	3841

7590 06/21/2007  
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EXAMINER
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MANCHO, RONNIE M

ART UNIT	PAPER NUMBER
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3663

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/807,088	Applicant(s) BAUER ET AL.	
	Examiner Ronnie Mancho	Art Unit 3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5,7,9-13,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 12,13,16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/23/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group (I) drawn to claims 1-3, 5, 7, 9, 10, 11 in the reply filed on 12/1/06 is acknowledged.
2. Claims 12, 13, 16, 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/1/06.

### *Claim Objections*

3. Claim 1 is objected to because of the following informalities: In claim 1, the applicant is advised to change "at least *of one a*" to --at least *one of a*-- for clarity . Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3, 5, 7, 9, 10, 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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In amended claim 1, the applicant recites, “*a first linear accelerometer and a second linear accelerometer mounted to the vehicle in separate locations*, the first and second linear accelerometers generating measured vehicle state signals corresponding to the acceleration of the vehicle in a first direction;

*a third linear accelerometer and a fourth linear accelerometer mounted to the vehicle in separate locations*, the third and fourth linear accelerometers generating measured state signals corresponding to the acceleration of the vehicle in a second direction . This is new matter. That is applicant’s section 0011 disclose “a plurality of sensors 14”. Applicant’s section 0015 disclose “sensors 14 (identified individually as S1 and S2) are in known and fixed positions”. Applicant’s fig. 2 shows only two sensors S1 and S2 located at separate positions. Therefore applicant’s plurality of sensors are limited to 2 sensors S1 and S2. Thus, applicant’s original disclosure does not have possession of the limitations, “*a first linear accelerometer and a second linear accelerometer mounted to the vehicle in separate locations*, the first and second linear accelerometers generating measured vehicle state signals corresponding to the acceleration of the vehicle in a first direction;

*a third linear accelerometer and a fourth linear accelerometer mounted to the vehicle in separate locations*”. It is further noted that applicant’s section 0026 disclose “in stability control, in which measuring yaw rate and roll rate/angle is useful, four accelerometers can be used for sensors 14”. Applicant does not indicate that the four accelerometers must be “linear accelerometers” as claimed. Applicant further does not disclose the positioning relation ship of the four accelerometers. Thus, applicant’s original disclosure does not have possession of the limitations, “*a first linear accelerometer and a second linear accelerometer mounted to the*

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*vehicle in separate locations*, the first and second linear accelerometers generating measured vehicle state signals corresponding to the acceleration of the vehicle in a first direction;

*a third linear accelerometer and a fourth linear accelerometer mounted to the vehicle in separate locations”*.

The rest of the claims are rejected for depending on a rejected base claim or for having similar deficiencies.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-3, 5, 7, 9, 10, 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the applicant recites, “separate locations”. It is not clear if the claimed “separate locations” refer to a separation between the first sensor and second sensor or between the third sensor and second sensor or between the (first, second sensors) and the (third, fourth sensors)?

The rest of the claims are rejected for depending on a rejected base claim.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 5, 7, 9, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tseng et al (2005/0149240) in view of Fukushima et al (4865347).

Regarding claim 1, Tseng et al (abstract; figs. 1-8) disclose a system for estimating body states of a vehicle comprising:

a first linear accelerometer and a second linear accelerometer mounted (32, 35; sec. 0046, 0046 eqtn 1; fig. 4) mounted to the vehicle in separate locations, the first and second linear accelerometers generating measured vehicle state signals corresponding to the acceleration of the vehicle in a first direction (sec 0023 to 0028, 0046, 0047);

a third linear accelerometer (36; sec. 0046, 0047 eqtn 1; fig. 4) mounted to the vehicle in separate locations, the third linear accelerometers generating measured state signals corresponding to the acceleration of the vehicle in a second direction (sec 0023 to 0028, 0046, 0047)

Tseng does not disclose a fourth linear accelerometer mounted to the vehicle in separate locations. However, Fukushima et al (figs. 1, 6; col. 10, lines 29-67) teach of a third linear accelerometer and a fourth linear accelerometer mounted to the vehicle in separate locations, the third and fourth linear accelerometers generating measured state signals corresponding to the acceleration of the vehicle in a second direction.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tseng as taught by Fukushima et al for the purpose of measuring acceleration of other units in a vehicle.

Therefore the combination of Tseng and Fukushima et al further disclose:

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a signal adjuster (see Tseng 66, 68, fig. 4) which transforms the measured vehicle states signals from a sensor coordinate system to a body coordinate system associated with the vehicle (sec. 046 to 0050); and

a filter (see Tseng 74, fig. 4; sec 0049) which receives the transformed measured signals from the signal adjuster (66, 68) and processes the measured signals into body state estimates (see Tseng figs 4, 6-8) of the vehicle, the body state estimates include at least one of a roll rate, a roll angle and a yaw rate.

Regarding claim 2, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the filter includes a model of the vehicle dynamics and a model of the linear accelerometer, the state estimates being based on the transformed measured signals and the models of the vehicle dynamics and linear accelerometers.

Regarding claim 3, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the filter includes an estimator, an algorithm being implemented in the estimator to process the transformed measured signals and the models of the vehicle dynamics and linear accelerometers and generate the state estimates.

Regarding claim 5, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 further comprising an angular rate sensor.

Regarding claim 7, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 further comprising two accelerometers that measure accelerations in a third direction.

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Regarding claim 9, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 further comprising two linear accelerometers that measure the vertical accelerations of the vehicle.

Regarding claim 10, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the state estimates relate to the vehicle's lateral velocity, yaw rate, roll angle, and roll rate.

Regarding claim 11, Tseng/Fukushima et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the signal adjuster further provides compensation for gravity biases associated with the linear accelerometers.

#### ***MPEP 2114***

The statement of intended use or field of use, "generating measured...state signals corresponding to", "which receives the transforms", etc clauses are essentially method limitation or statement of intended or desired use. Thus, the claim as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ 641; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 512 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647. See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ 2nd 1647.



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Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

The prior art anticipate the structural limitations in the apparatus claims. Even if the prior art did not perform the method limitations recited in the apparatus claims, which the examiner is not conceding, it is believed that the structural arrangement in the prior art is capable of performing the method limitation recited in the apparatus claims.

Applicant may overcome the MPEP 2114 rejection by amending the claims to read for example “configured to measure.....state signals”, etc.

### ***Response to Arguments***

10. Applicant's arguments with respect to claim 12/1/06 have been considered but are moot in view of the new ground(s) of rejection.

### ***Communication***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ronnie Mancho  
Examiner  
Art Unit 3663

6/9/07

JACK KEITH  
SUPERVISORY PATENT EXAMINER